What is claimed is:

1.   A software implemented in a circuit for sensing p-waves in a pacemaker, the system in

combination with the circuit comprising:

5   means for detecting atrial depolarization signals;

          means for pacing the ventricle synchronous with said atrial depolarization signals; and

          said means for detecting including subcutaneous electrodes in data communications with

said means for pacing having at least one pacing lead.

10   2.   The system of claim 1 wherein said means for pacing is a single chamber ventricular-

inhibited pacemaker.

3.   The system of claim 2 wherein said pacemaker includes a hermetically sealed case

including said subcutaneous electrodes being peripherally distributed about the perimeter of the

15   case.

4.   The system of claim 2 wherein said pacemaker is coupled to a ventricular pacing lead.

5.   The system of claim 4 wherein said pacing lead is one of unipolar and bipolar structure.

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6.   A sensing circuitry in co-operation with a pacer, a lead and a plurality of subcutaneous

electrode arrays (SEA) implemented for pacing the ventricle synchronous with atrial

depolarization signals, the circuitry comprising:

an analog-digital converter (ADC) for converting a plurality of signals,

a plurality of filters coupled to said ADC;

a detector for detecting at least one of said plurality of signals in communication with

said plurality of filters;

5   a digital to analog converter (DAC) to convert signals passing through said detector; and

means for R-wave detection and means for p-wave detection coupled to said DAC.

7.   The circuit of claim 6 wherein said plurality of signals include signal inputs into said

ADC relating to ventricular electrogram (VEGM) from said lead, ECG data from said SEA and

10   ECG data from an external lead.

8.   The circuit of claim 7 wherein said VEGM is transmitted via a ventricular lead.

9.   The circuit of claim 7 wherein said ECG data is transmitted from external electrodes such

15   as from a programmer implemented to validate said ECG data from SEA.

10.   The circuit of claim 7 wherein said VEGM signals include intrinsic ventricular

depolarization waveforms that inhibit scheduled ventricular output pulse.

20   11.   The circuit of claim 7 wherein said ECG data from the SEA is a primary input and

provides ECG data to the ADC on a substantially continuous basis.

12. A software system implemented in a circuit to monitor underlying sequences that are used in single chamber ventricular-inhibited pacemaker, the sequencing method:

starting a PR cross check internal when a p-wave threshold crossing is sensed;

discounting a p-wave if an R-wave is detected in the PR cross check; and

5   triggering a PVARP interval when an R-wave is detected.

13. The sequencing method of claim 12 wherein said PVARP interval is used to blank retrograde p-waves thereby providing protection against pacemaker-mediated tachycardia (PMT).

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14. The sequencing method of claim 12 wherein a VA interval is extended by an AV interval period and ventricular pacing pulse is emitted if no p-wave is sensed.